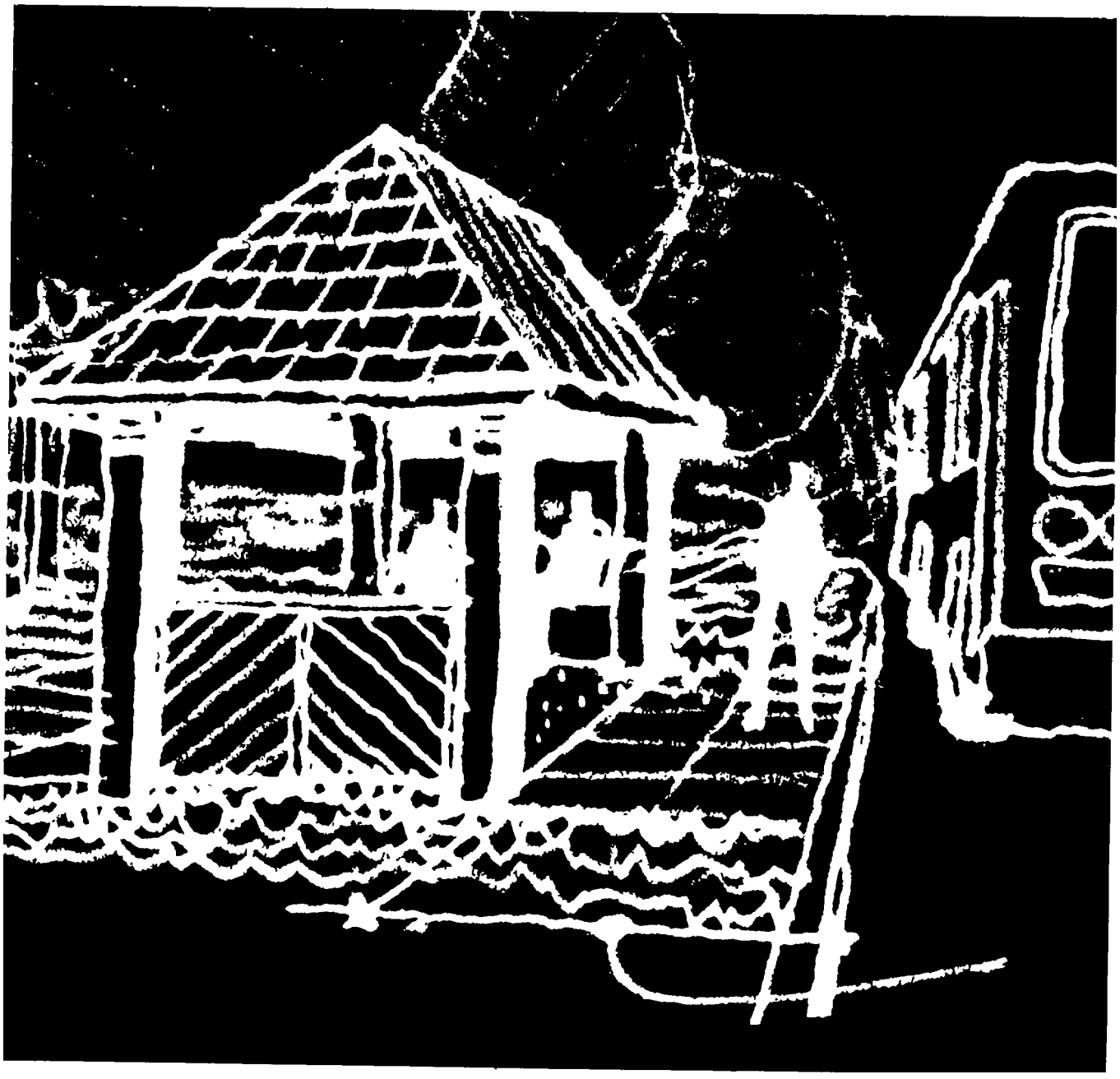
A wide variety of site furnishings is commonly found on military installations. These site furnishings include both utilitarian items such as benches, bus shelters, trash containers, or fences, as well as more symbolic elements such as flagpoles, memorials and historic military equipment displays. With proper planning and design, site furnishings can not only fulfill their intended function but also contribute positively to the overall visual quality, image and identity of the military installation.



Section I:

Observations and Objectives.

12-1.
Typical Problems.

A. Site Variations.

Field conditions vary considerably from installation to installation in terms of the type and appearance of site furnishings. Some of this variation properly reflects the site setting, architectural character and climatic conditions of the particular installation (*fig. 12-1*). Other variations are qualitative in nature. While all installations provide these necessary site furnishings, some have done so in a more successful manner, both functionally and aesthetically, than others.

B. Compatibility.

The specific needs and appropriate locations for seating, shelters, trash containers, fencing and so on change considerably over time. Each type of site furnishing is typically selected individually and on an incremental basis. Therefore, it is not surprising to find a collection of unrelated seating and trash containers resting uncomfortably together on the same street corner (*fig. 12-2*). This lack of coordination as well as concern for detail, are the primary problems related to site furnishings.

Figure 12-1.

C. Coordination.

More successful examples of functional and attractive site furnishings are found at installations that have established an overall plan and coordinated design system of site furnishings. Less successful examples have resulted at installations which have followed a piecemeal approach of selecting site furnishings without proper regard for either user needs, site setting, architectural character or climatic conditions of the installation (*fig. 12-3*).

fig. 12-2.

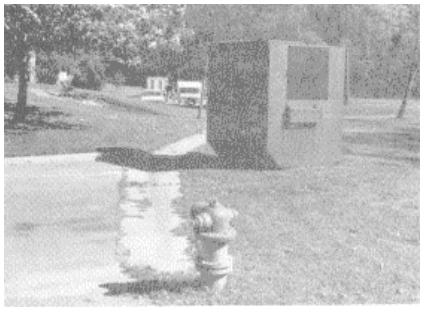


Figure 12-3.

12-2.
Objectives.

A. Provide Site Furnishings Appropriate to their Intended Function.

The design of bus shelters should vary with climatic conditions. The design of fencing should vary with the function it is to perform. Care should be exercised in the selection of standardized site furnishings to make certain they are appropriate for a specific application at the installation.

B. Establish a Coordinated System of site Furnishings.
Site furnishings should be part of a coordinated system, based upon an overall design scheme that harmoniously relates furnishings to the architectural character of the installation and other site furnishings in terms of their scale, materials and details.

C. Consolidate and Simplify the Design of Site Furnishings.
The number of different site furnishings should be minimized and their design should be simplified. Site furnishings should neither clutter nor dominate the visual character of the installation. Wherever possible, they should be grouped together and be multi-functional.

D. Provide Consistency and Continuity in the Use of Site Furnishings. Site furnishing designs should be utilized to unify the image and identity of the installation. Once a coordinated system of site furnishings has been established, it should be employed consistently throughout the installation and continuously followed over time.

E. Incorporate Adequate Provisions for the Handicapped.
Provisions for the handicapped should be incorporated into the design of site furnishings, especially in areas of the installation where handicapped persons might live, work, shop or visit.

Section II:

Design Guidelines.

12-3.
Benches, Seating and Tables.

1. Locate seating oriented to user needs of waiting and resting adjacent to paved walkways, entry-ways, and plazas, near the tops and bottoms of major stairs and ramps, at bus stops and other locations deemed appropriate by anticipated need and use.

2. Locate seating oriented to user needs of socializing, relaxing and eating in less formal spaces with a pleasant setting and view that are conducive to their intended purpose.

3. Seats should be set back 2'-0" from adjacent sidewalks to provide ample leg room and not to impede or obstruct pedestrian traffic.

4. A space of 4'-0" should be provided at the end of benches to enable strollers and wheelchairs to be parked (*Figure 12-4*).

5. A space of 5'-0" should be provided between the front edge of the seat and any stationary obstacle such as a water fountain, trash receptacle or sign post.

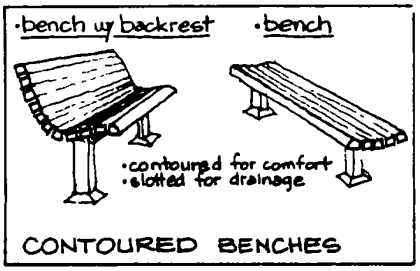


Figure 12-5.

6. Especially where longer-term sitting occurs, seats should be designed with back supports, contoured seats and arm rests for comfort in sitting and support in getting up and down from the seat (*fig. 12-5*).

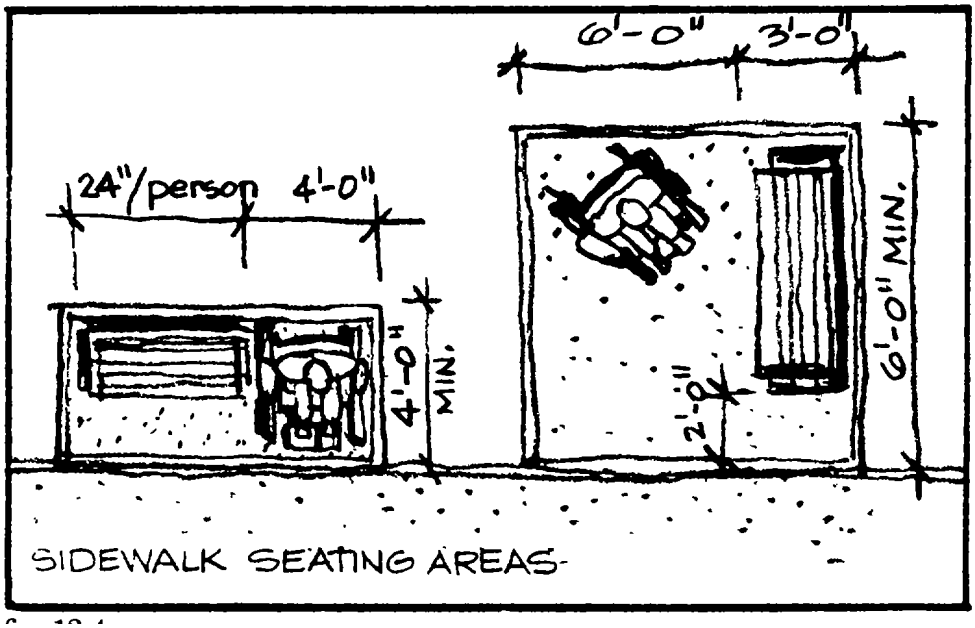


Figure 12-4.

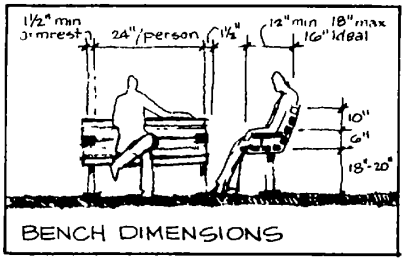


Figure 12-6.

7. Seat height should be 18"-20" from the ground and be uniform and level (*fig. 12-6*).

8. Seat depth should be 12" minimum to 18" maximum (16" ideal) and be pitched back at an angle of 0-5 degrees to the horizon (*fig. 12-7*).

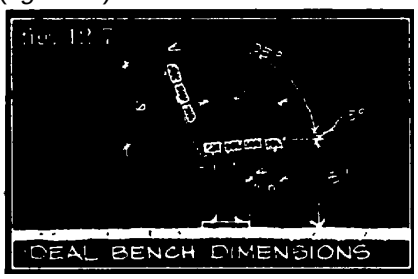


Figure 12-7.

9. Seat width should be 24" per person.

10. Back rests should be 15"-18" high (16" ideal) and at an angle of 90-110 degrees to the seat (105 degrees ideal).

11. Arm rests should be 6" high from the seat and be a minimum width of 1½".

12. The seat should overhang the support legs by a minimum of 4" to provide heel space and to facilitate rising from a seating position.

13. Seat surfaces should be pitched or slotted to shed water.

14. Seats should be constructed to support a minimum of 250 pounds for each person they are designed to accommodate.

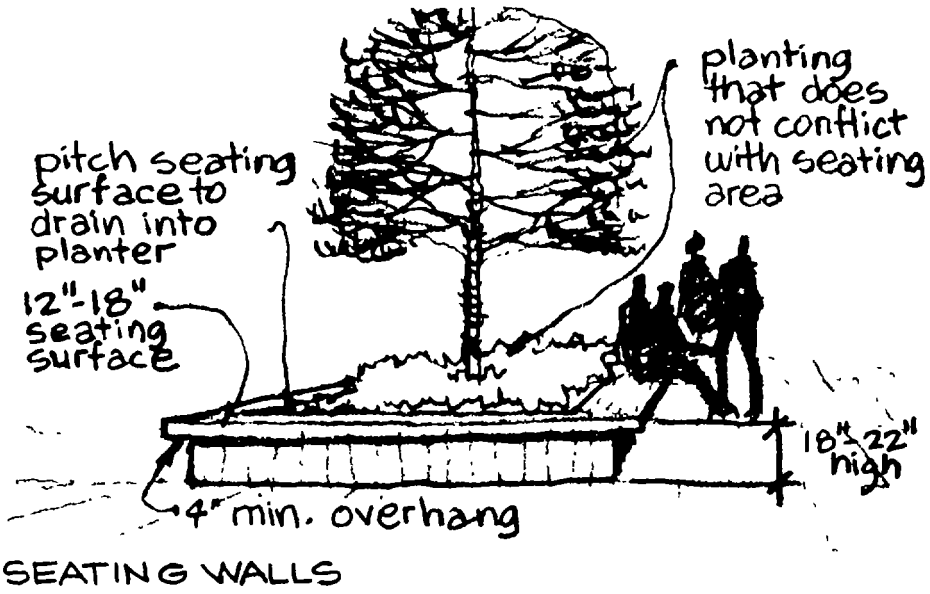


fig. 12-8.

15. Seat surfaces should be smooth and constructed of materials that do not tend to either retain heat or cold, or splinter. Redwood, alerce, and vertical grained tank stock douglas fir are recommended wood seating surfaces.

16. Seats should have no sharp edges or protruding hardware.

17. All wood should be nonsplintering and have rounded edges.

a. All metal should have rounded edges and be rustproof.

b. All mounting hardware should be concealed, recessed and/or plugged.

c. Seating in areas subject to vandalism should be selected with care for firm anchoring to the ground and durable materials.

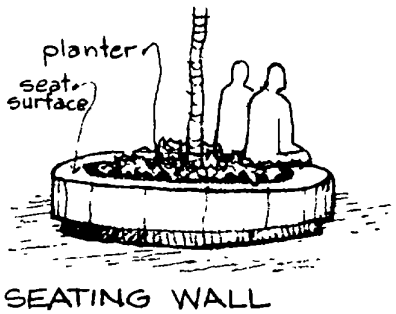


Figure 12-9.

B. Seating Walls.

1. Seat height should be 18"-22" *(fig. 12-8*).

2. Seat depth should be 12" minimum and 18" maximum.

3. Seating surface should be pitched 1/8" per 12" to allow surface water to drain back into the planting bed (*fig. 12-9*).

4. Seating surface should ideally have a 4" overhang from the planter wall for heel space and facilitate rising from a seating position.

5. Provide 2'-0" for leg space in front of the seat edge in order not to impede pedestrian traffic.

6. Use dull and light colored materials for seating surfaces that will be in direct sunlight to keep them cooler. Use dark and shiny surfaces only in shaded locations so they do not become uncomfortably hot in the direct sunlight.

7. Vegetation near seating walls should not conflict with pedestrians or people sitting; avoid species that are invasive, injurious or that shed excessive or staining debris.

C. Tables.

1. Table height should be 30"33" (*fig. 12-10*).

2. Table depth should be 18" minimum if utilized from one side only (36" if utilized from both sides).

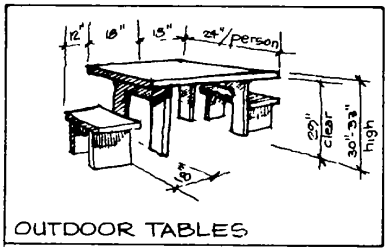


Figure 12-10.

3. Table length should be 24" per person.

4. Leg space under tables (from the inside edge of seat top to the nearest table support) should be 18".

5. A minimum vertical clearance of 9" should be provided between the seat top and the bottom edge of the table top.

Figure 12-11.

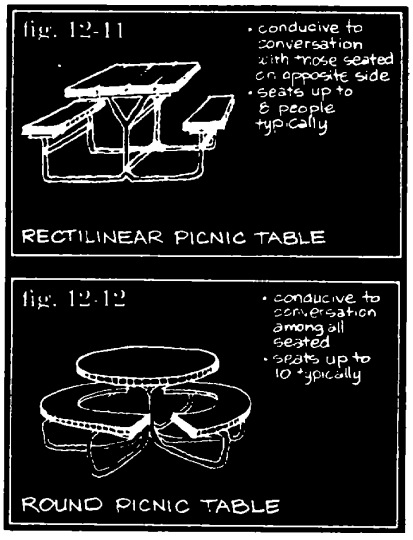


Figure 12-12.

6. Stationary picnic table benches should not have back rests (*figs. 12-11 and 12-12*).

7. Table tops should be smooth surfaced with no recesses that might hold water or food particles.

8. All edges and corners should have rounded, eased or chamfered edges; all hardware should be concealed, recessed or plugged.

9. Provisions for the handicapped.

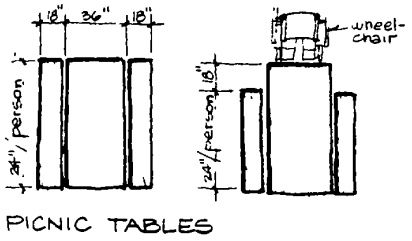


Figure 12-13.

a. A clear space of 29" from the ground to the underside of the table should be provided for wheelchair-dependent persons to pull up beneath the table top at the end of the table; a minimum of 18" should be provided from the end of the table top to the nearest support leg (*figs. 12-13 and 12-14*).

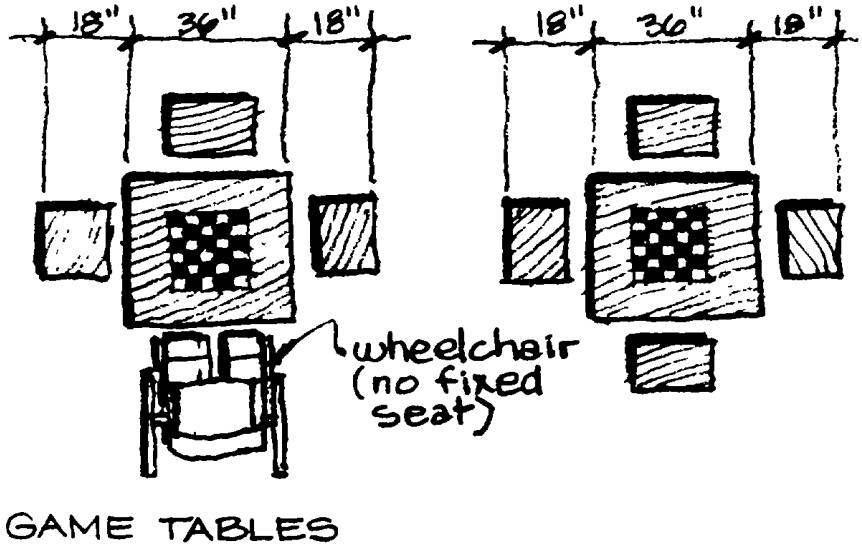


Figure 12-14.

b. A clear width of 34" is necessary to accommodate a wheelchair-dependent person.

c. Provisions should be made for hard-surfaced paved access for persons handicapped in their movement (crutches or canes), wheelchair-dependent persons and persons with strollers or carriages.

12-4.

Outdoor Drinking Fountains, .

A. Location.

1. Drinking fountains should generally be located along walkways and hard-surfaced paved areas that are easily accessible (*fig. 12-15*).

2. Drinking fountains should be located conveniently to a potable water supply line or well.

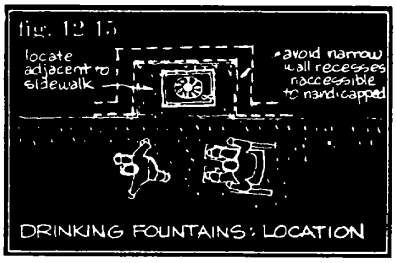


Figure 12-15.

3. More frequent locations are required where outdoor eating occurs and on installations that have warm climates.

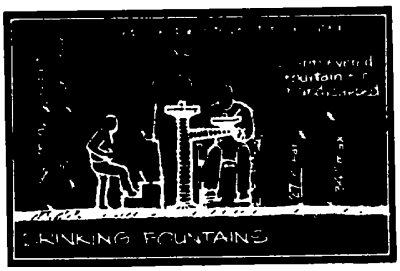


Figure 12-16.

B. equipment.

1. Nozzle height should be 36"39" from the ground for adults; the height for children should be 24"-30", provided by either a separate fountain or stepping blocks to an adult fountain (*fig. 12-16*). (*See also "Provisions for the Handicapped" below.)*

2. Drinking fountain controls should preferably be hand-operated levers rather than knobs or foot pedals.

3. Both nozzle and controls should be located at the front of the fountain.

4. A minimum 18" wide paved area should be provided around the fountain to avoid both mud and puddles.

5. Fountain bowls should be either bronze or stainless steel and equipped with strainers.

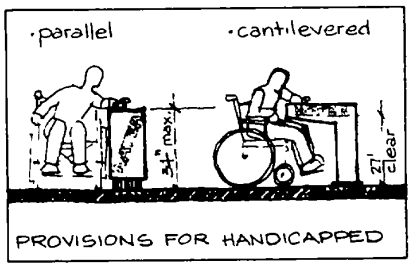


Figure 12-17.

6. Stepping blocks for children should be located so as not to interfere with access to the fountain by either normal ambulent adults or wheelchair-dependent people.

C. Provisions for the Handicapped.

1. Avoid locating fountains in narrow wall recesses with insufficient space for access by wheelchair-dependent persons.

2. Specific provisions for wheelchair-dependent persons include a 12'-18" cantilevered fountain bowl with a nozzle height of 34" above the ground and a minimum 27" vertical clearance below the fountain bowl to the ground (*fig. 12-17*).

3. Provide a hard-surfaced paved fountain pad with a minimum width of 36" and length of 4'-0" from the adjacent sidewalk.

12-5.

Outdoor Telephone Booths.

A. Location and Service.

1. Telephone booths should be located relative to potential use, convenience and installation costs.

2. Highly visible locations are best for better utilization and convenience as well as greater security from vandalism.

3. All service line wiring should be underground or concealed.

4. Telephone booths should be accessible by hard-surfaced paved sidewalks.

5. Locate booths so as not to impede or obstruct pedestrian traffic on adjacent sidewalks.

6. Telephone booths should be integrated with other street furnishings or convenience centers, such as bus or vending machine shelters, wherever possible.

B. Equipment.

1. Provide overhead weather protection at a minimum height of 6'-6" from the ground; semi-enclosed housing systems with overhead weather protection and acoustical panels are preferable to totally enclosed telephone booth housing systems (*fig. 12-18*).

2. Telephone booth materials should be easily maintained and resistant to vandalism smooth surfaced and resistant to defacing).

3. Telephone booths should be equipped with lighting for nighttime use.

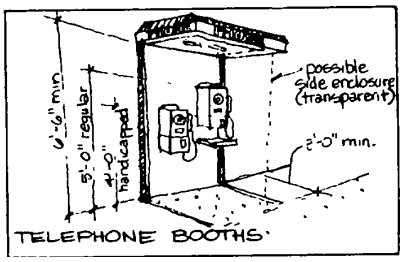


Figure 12-18.

4. Normal telephone mounting height is 5'-0" from the coin slot to the ground. (*See also "Provisions for the Handicapped" below.*)

5. Telephone booths should be mounted with a setback of 3'-0"' from the sidewalk and with a minimum lateral spacing of 30" per telephone.

6. Other provisions include telephone book storage, a package rest/writing ledge at a height of 30" from the ground with a pullout or fold-down seat.

7. Attractive, modular telephone booth systems, available through the telephone company, are appropriate at locations requiring future flexibility to expand the number of available booths.

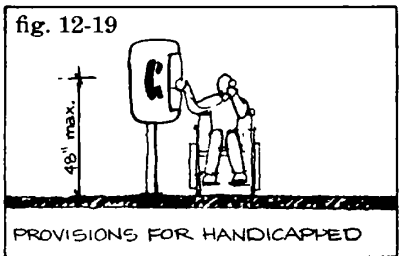


Figure 12-19.

C. Provisions for the Handicapped.

1. All groups of telephones should have at least one lower height telephone for use by the handicapped and children.

2. Telephone mounting height for the handicapped is 4'-0" maximum from the highest operating mechanism to the ground (*fig. 12-19*).

3. Other helpful provisions for the handicapped include volume controls on headsets and push button dials.

12-6.

Bus Shelters.

A. Location.

1. Bus shelters should be located where warranted by the degree of use and need for weather protection.

2. Bus shelters should be adjacent to paved sidewalks and not impede pedestrian traffic.

B. Design.

1. Bus shelters should provide protection from inclement weather conditions typical at the installation (*fig. 12-20*).

a. Installations in warmer climates generally require only overhead rain and sun protection.

b. Installations in colder climates require not only overhead protection but also enclosures on two or three sides for wind protection during colder periods of the year.

Figure 12-20.

2. Bus shelter designs should be simple, unobtrusive, consistent throughout the installation and harmonious with the architectural character of the installation in terms of their form, scale, materials and details.

3. Design bus shelters with sight lines to approaching buses; if the shelter has side enclosures, transparent openings should be provided for visibility and safety.

4. Bus shelter size depends on the anticipated use; the shelter can be generally sized by applying an area standard of 8 square feet/person to the typical maximum number of waiting persons at any one time during a day with inclement weather conditions. The seating capacity under cover should be equal to the average number of persons waiting at the bus stop.

5. Bus shelters should have a minimum size of 5' x8' (40 square feet.)

6. Outdoor seating can be provided near the bus shelter for waiting during pleasant weather conditions.

7. Structural supports for bus shelters should be located out of the path of persons circulating within the shelter or passing the shelter.

8. All waiting areas at bus shelters should have hard-surfaced paving that adequately drains to prevent puddles.

9. The minimum setback from the curb should be 3'-6".

10. Provide a minimum height of 6'-6" from the ground to the underside of the protective roof or canopy.

11. Provide light at bus shelters that will be used at night.

12. Provide amenities such as bus route identification, scheduling and route maps, and an installation map directory. (*See Chapter 10: Signing.)*

13. Bus shelters should serve as a multi-functional facility; other site furnishings that could be incorporated into bus shelter design include a bulletin board, telephone booth, drinking fountain, mailbox, and newspaper vending machine.

C. Provisions for the Handicapped.
These include hard-surfaced paving and curb-free access. Sufficient space should be allocated for wheelchair circulation and parking within the bus shelter.

12-7.
Vending Machine Shelters.

A. Location.

1. Vending machine shelters should be provided to organize and consolidate vending machines into attractive convenience centers when these machines cannot be located in recessed building alcove spaces (*fig. 12-21*).

2. Vending shelters should generally be located conveniently to work and residential centers and picnic areas.

3. Locate shelters in highly visible places to attract users and provide security from vandalism.

4. Avoid locations near entrance areas to the installation.

5. Vending shelters should be accessible by hard-surfaced sidewalks, but not obstruct or impede pedestrian traffic.

6. Electrical feeder service to vending shelters should be underground or concealed.

B. Equipment and Design.

1. The design of the vending shelter enclosure should be harmonious with the architectural character of the surroundings in terms of its form, scale, materials. and details.

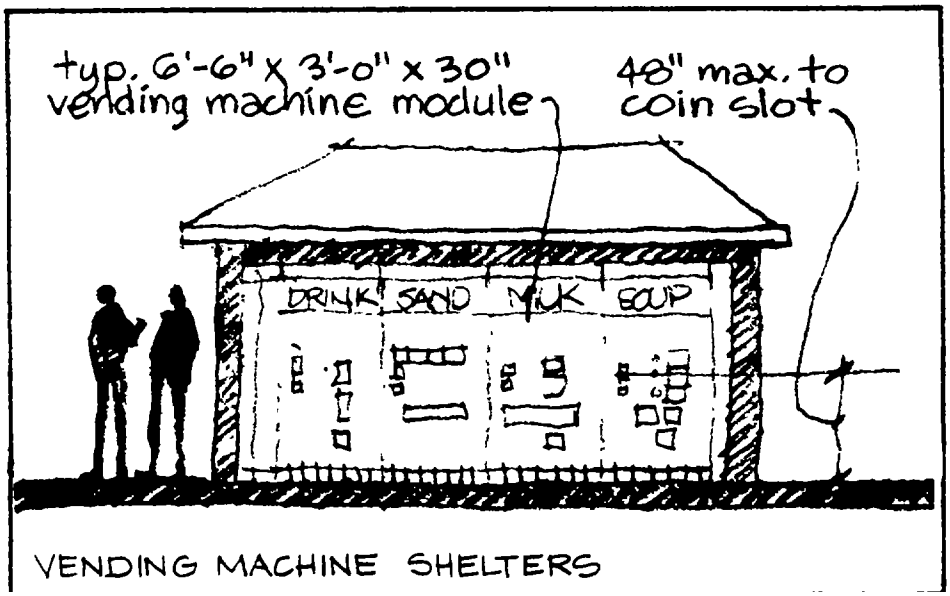


Figure 12-21.

2. Vending machines should be a coordinated system; typical vending machine modules are 36" wide, 30" deep, and 6'-6" high.

3. Vending shelters should preferably provide overhead weather protection for users as well as machines.

4. Provide adequate trash receptacles that are integrated with the design of the shelter.

5. Provide seating area, preferably both under protective cover as well as outdoor, adjacent to the shelter.

6. Provide light in front of the machines for nighttime use and security

7. Other accessory site furnishings that could be integrated with the design of the shelter include a telephone booth, mailbox, bulletin board, installation directory map, drinking fountain and newspaper vending machine.

C. Provisions for the Handicapped.
Hard-surfaced, barrier-free access should be provided. Vending machine systems should be provided with coin slots, selection buttons and dispensers at a maximum height of 4'-0" from the ground

12-8.
Kiosks.

A. Use and Location.
Kiosks can be used as information and notice centers, especially along high use pedestrian and visitor traffic areas (*fig. 12-22*).

1. Provide kiosks only in areas where they are needed; have high visibility as well as exposure to pedestrian traffic.

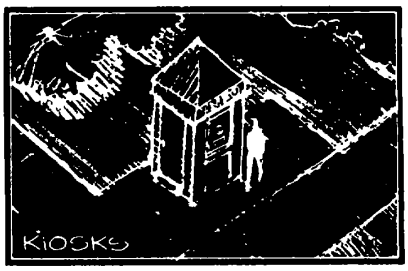


Figure 12-22.

2. Locate kiosks with sufficient hard-surfaced paved area for accommodating users without impeding passing pedestrian traffic.

B. Design.

Kiosks should be designed to fulfill their intended function while blending compatibly with their setting.

1. The form, scale, and materials of kiosks should relate harmoniously to the architectural character of their setting.

2. Try to establish a common design vocabulary for kiosks, bus shelters and vending shelters within the installation.

12-9.

Walls and Fencing.

A. Functions and Applicability.

1. Walls and fencing should be used appropriately for the following functions:

a. Security

b. Boundary definition

c. Visual screening

d. Wind screening

e. Pedestrian and vehicular traffic control

f. Retaining soil (grade change)

g. Recreational ball screens (tennis, etc.)

2. Walls and fencing should be of appropriate design and materials to fulfill their function while in harmony with the character and appearance of their setting.

a. Chain link type fencing should generally be limited to uses such as security fencing, general boundary fencing or tennis court fencing.

b. Wood or masonry walls and fencing are generally the most compatible and harmonious materials for use in residential environments.

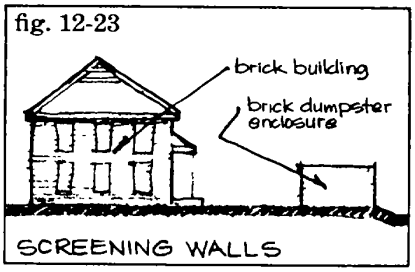


Figure 12-23.

c. Trash containers should be screened effectively with opaque fences or walls of appropriate design and materials compatible with the architectural character and setting (*fig. 12-23*).

d. Earth berms and plant materials are preferable to either walls or fencing when screening parking lots, loading and storage

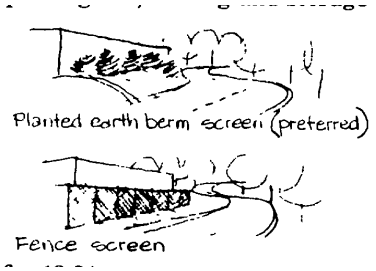


Figure 12-24.

areas, or similar functions from view along main roads of the installation (*fig. 12-24*).

3. The visual character of main entrances to installations should not be dominated by chain link type fencing; either more attractive type fencing should be used or the visual obtrusiveness of the chain link fencing should be minimized by the use of plant materials and dull black chain link fencing (vinyl clad).

B. Fencing.

1. Unless specifically designed for security purposes, fencing should not present any unnecessary dangers for people who might be tempted to climb over.

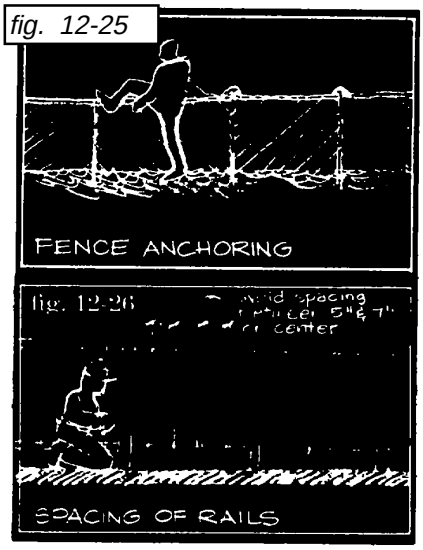


fig. 12-26

2. Support posts should be adequately strong and properly anchored to the ground so that the fence will not collapse under either high winds or the weight of a climber (*fig. 12-25*).

3. The fence material should be well-secured to all posts.

4. Fencing should be free of all dangerous appendages or projections that would be injurious to persons on an adjacent walkway or playfield; all exposed fastening devices and material edges should be rounded off, knuckled or capped to prevent cuts and abrasions.

5. All slatted fences and railings should avoid horizontal or vertical spacings between 5"-7" where children's heads might easily be caught between members (*fig. 12-26*).

C. Walls.

1. All necessary low wall designs should consider the possibility of incorporating seating surfaces, if appropriate.

2. Weep holes and wall drains should not drain onto and across walkways where they could create slippery ice spots during winter months in colder climates.

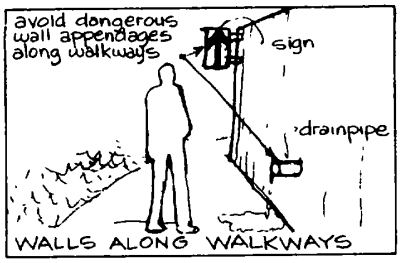


Figure 12-27.

3. Walls adjacent to pedestrian walkways should be free of appendages or projections such as drain pipes or signs that could injure passing pedestrians (*fig. 12-27*).

4. Handrails for the handicapped should be considered along higher walls adjacent to walkways.

D. Baffle Walls.

1. Baffle walls should be used to block direct views into an area without hindering access or providing doors, such as at entries to outdoor rest rooms (fig. 12-28).

2. There should be a minimum clearance of 4'-0" between walls of a baffle.

3. Where semi-ambulent people will use the facility, handrails mounted 32"-36" from the ground should be provided on the walls and be able to support 200 pounds.

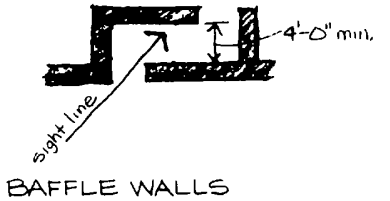


Figure 12-28.

E. Chain Barriers.

1. Chain barriers should generally be avoided as a fencing type because of their ineffectiveness and the safety hazards they create for pedestrians, bicyclists and automobiles if inadequately identified as obstacles.

2. Chain barriers should only be used as vehicle barriers in areas such as drop-offs where there is low-speed traffic.

3. Vehicle chain barriers should be designed to be suspended between sturdy, well-anchored supports with the lowest (most slack) point of the chain being a minimum of 2'-8" above the ground; the chain barrier should be well-marked with reflector devices so that it can be easily recognized at night (*fig. 12-29*).

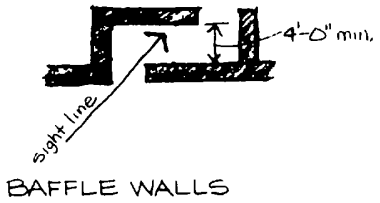


Figure 12-29.

F. Gates.

1. A gate should be compatible in design and materials to the fence or wall in which it is located.

2. The width of the gate should be adequate for wheelchair access.

3. Gates should be rigidly constructed to prevent racking and should be securely anchored to the wall or fence.

12-10.

Trash and Garbage Receptacles.

A. Trash Receptacles and Litter Baskets.

1. Trash receptacles should be attractive sidewalk furnishings of a consistent design throughout the installation (*figs. 12-30, 12-31 and 12-32*).

2. Combine trash receptacles with other site furnishings to create consolidated, multi-purpose facilities where possible.

Figure 12-30.

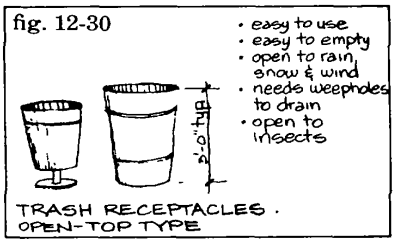
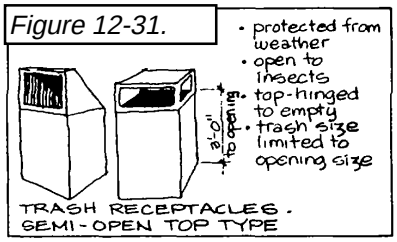


Figure 12-31.



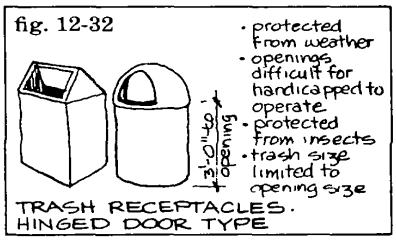


Figure 12-32.

3. Trash receptacles should be highly visible and immediately available for effective litter control. Locate receptacles conveniently and strategically along sidewalks, near major walkway intersections, building entrances, benches, vending machine areas and recreation and picnic areas.

4. Locate trash receptacles to the side of walkways so as not to impede pedestrian traffic or create safety hazards.

5. Trash receptacles should be of the proper size and distribution to provide adequate capacity and avoid overspilling; proper capacity depends on the rate of trash accumulation and the frequency of collection.

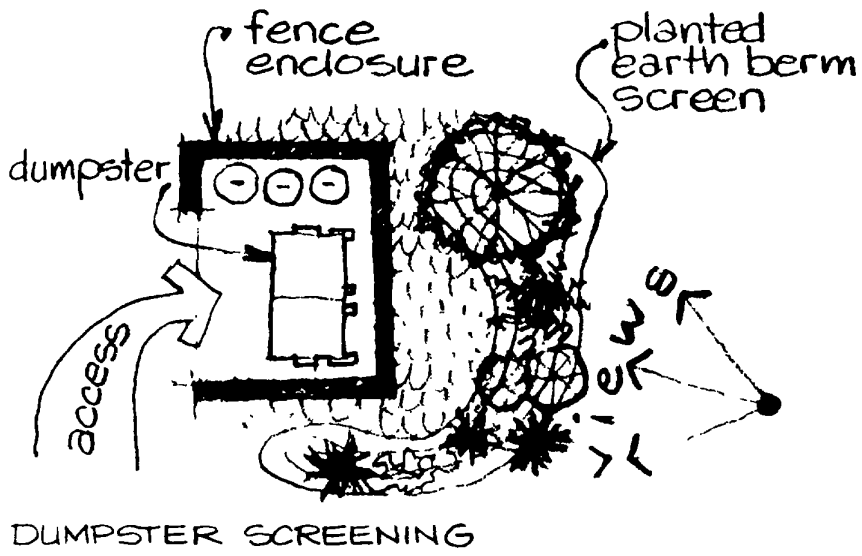


fig. 12-33.

6. Receptacle designs with either disposable inner-linings or removable/reusable inner containers are preferable to selfdumping type designs (hinged bottom, top or sides).

7. Consider weather protection, odor containment, and desired insect-proofing when selecting a trash receptacle design.

8. Receptacles with hinged deposit door openings should be of the type that can be operated by a single hand movement; avoid foot-operated lid-type receptacles.

9. Trash deposit openings should be approximately 3'-0" above the ground.

10. Trash receptacles should be sufficiently strong and stable to resist overturning either by typical use, high winds, or animals seeking food.

11. All receptacle edges should be crimped, rounded and smooth to prevent cuts and abrasions and to encourage use.

B. Garbage Cans and Dumpster Containers.

1. Garbage cans and dumpster containers should be conveniently located to the facility they serve.

2. Avoid garbage can and dumpster locations adjacent to main roads and sidewalks of the installation.

Figure 12-34.

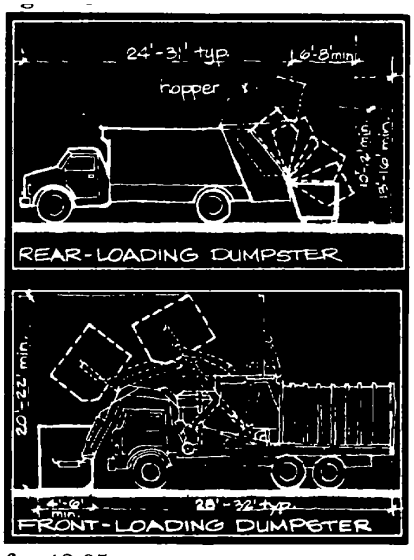


Figure 12-35.

3. All garbage can and dumpster container areas should be screened on at least three sides by an opaque fence or wall of sufficient height to block views of the containers (*fig. 12-33*).

4. In addition to the enclosure screening, plant material and earth berms should be used for general screening of the trash collection areas from view of main roads, sidewalks and building entrances.

5. Garbage can and dumpster container areas should be directly accessible by paved parking lot or service roads; adequate turning radius, parking length and overhead clearance (from trees, utilities and structures) should be provided for the trash collection vehicle (*figs. 12-34 and 12-35*).

6. All garbage can and dumpster container areas should be on hard-surface paved pads for ease of access and maintenance; any curb along the collection access side should be ramped.

7. Provide adequate storage capacity to handle accumulated refuse between collection periods (*figs. 12-36, 12-37 and 12-38*).

8. All garbage cans and dumpster containers should have properly fitting lids that can be securely fastened to contain odor and discourage animals and insects.

9. Dumpster lids or sliding doors should be easily operable by users; convenience steps should be provided if necessary for dumping into high containers. *(fig. 12-39*).

Figure 12-36.

Figure 12-38.

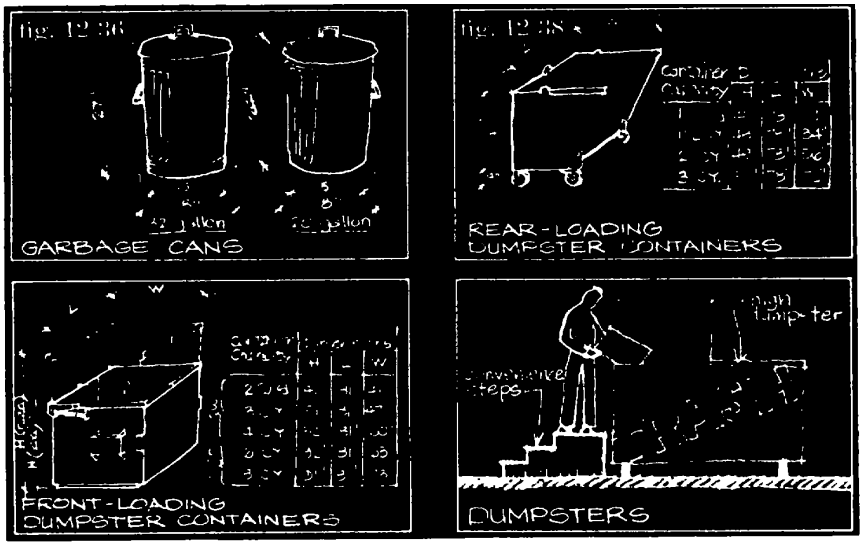


Figure 12-37..

C. Large Bulk Refuse Containers.

1. Large bulk refuse containers, such as might be used at shopping centers or industrial areas, should be located at a truck loading dock area of the facility they serve (*fig. 12-40).*

2. Large refuse containers should be located in a way to screen them from view of major roads, building entrances and adjacent residential, office or commercial areas. Large refuse containers should be screened by an attractive opaque enclosure, planting and/or earth berm.

3. Large refuse containers should be located on hard-surface paved pads or loading docks that are directly accessible by collection trucks; provide adequate turning radius, parking length and overhead clearance for the refuse collection truck and its container loading operation.

Figure 12-39

12-11.

Monuments and Memorials.

A. Memorial Plaques.

1. Memorial and commemorative plaques should be compatible in terms of their scale, materials and details with the architectural character of their settings; they should be designed as an integral part of a building design or landscape feature (*fig. 12-41).*

Fig. 12-40.

2. Where a number of memorials or commemorative plaques are contemplated for an installation, consideration should be given to organizing them in a central area or plaza specifically designed for such a purpose. (*See Paragraph 10-6; Special Signing*.)

B. Monuments and Historic Military Equipment Displays.

1. Monuments and military equipment displays should be carefully designed at prominent locations if they are to serve as visual focal points within the installation.

2. Where a number of historical military equipment is contemplated for display, they should not be spread indiscriminately throughout the installation, but rather consolidated into one

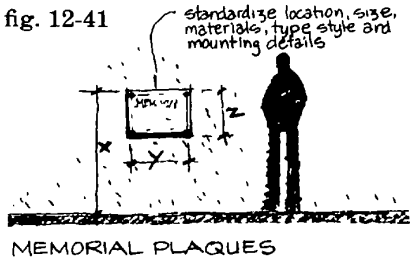
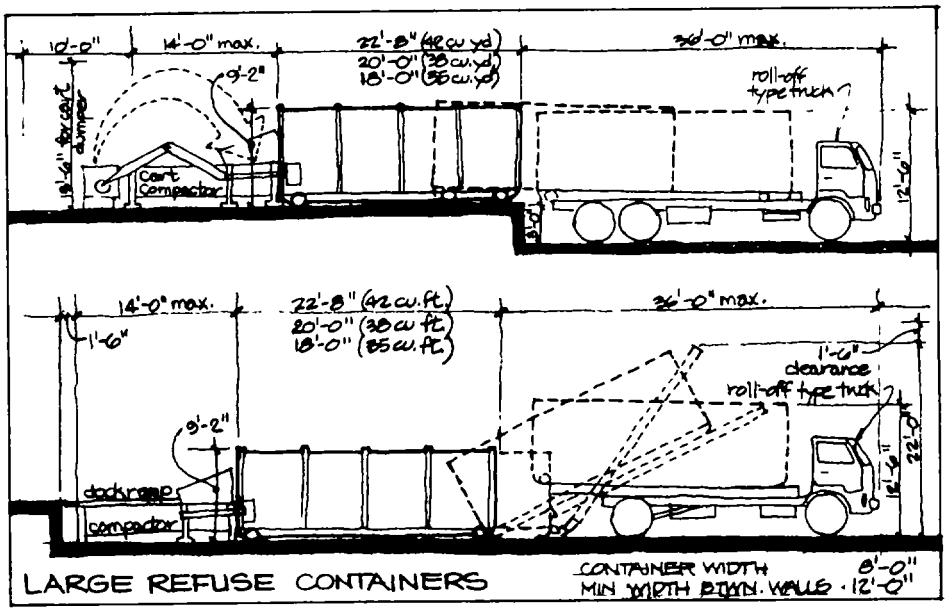


Figure 12-41.



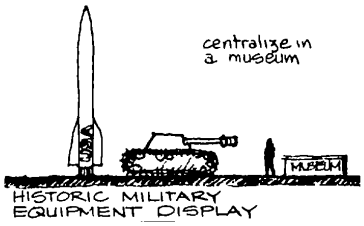


Figure 12-42.

area to create a central museum or exhibition facility within the installation (*fig. 12-42*).

12-12.
Miscellaneous.

A. Flagpoles.

1. A standard flagpole design should be used throughout the installation (*fig. 12-43*).

2. Avoid unnecessary flagpole locations and proliferation; consider creating a unique focal point by grouping flagpoles to create visual highlight and emphasis.

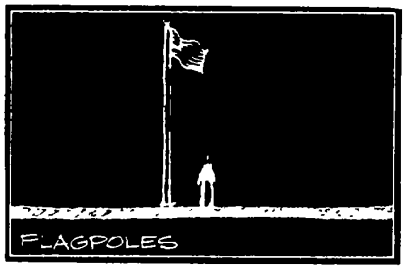


Figure 12-43.

3. Use a hard-surface paving material on at least one side of a flagpole to facilitate personnel access for raising and lowering flags.

B. Mailboxes.

1. Locate mailboxes as close as possible to the buildings they serve; coordinate location with the Postal Service and type of delivery (*fig. 12-44*).

2. If group mailboxes are necessary, provide central locations that are weather protected and highly visible.

3. Where possible, combine group mailbox shelters with other multi-purpose shelters such as vending shelters, telephone or bulletin board areas.

4. Locate mailboxes adjacent to hard-surface walkways but not so as to impede pedestrian movement.

5. Freestanding mailbox shelters should relate harmoniously to the architectural character of the setting in terms of their form, materials and details.

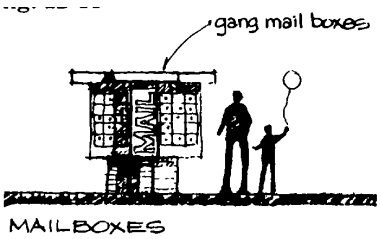


Figure 12-44.